

Notice of Allowability

Application No.

10/635,922

Examiner

Etsub D. Berhanu

Applicant(s)

CHERNOGUZ ET AL.

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 5 June 2006.
2. ☒ The allowed claim(s) is/are 1, 2, 7-16, 19-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ronni S. Jillions on July 6, 2006, wherein the applicant and examiner discussed amending "including" to read -- consisting of -- in claims 1, 16, 30 and 31 to provide a proper Markush group format in the claims, and deleting claims 17 and 18.

The application has been amended as follows:

Claim 1 has been amended to read:

1. A method for decomposition of a multiple channel signal reflecting characteristics of a blood perfused fleshy medium for use in determination of at least one desired blood parameter, the method comprising:

(a) illuminating a portion of the medium by amplitude-modulated light of more than two different optic channels having wavelength in a range where the scattering properties of blood are sensitive to light radiation;

(b) sensing a light response of the medium and generating said multiple channel signal; and

(c) analyzing said multiple channel signal, where the analyzing includes:

(i) filtering said multiple channel signal and separating at least a part of multiple channels from each other; and

(ii) providing time evolutions of the light responses of the medium for the part of said multiple channels,
the method, wherein

said amplitude-modulated light is activated in a composite mode regime selected from the group [including] consisting of a short serial-parallel mode regime and a mixed-rate short serial mode regime; and

the filtering of said multiple channel signal and the separating of said multiple channels from each other both include applying an adaptive resonator bank to said multiple channel signal.

Claim 16 has been amended to read:

16. A system for determination of at least one blood parameter of a blood perfused fleshy medium, the system comprising:

(i) a generator for providing a train of activating pulses;

(ii) a multiplexer (MUX) coupled to the generator configured for switching the activating pulses between different optic channels, wherein said switching is carried out in a composite mode regime for said activating pulses selected from the group [including] consisting of a short serial-parallel mode regime and a mixed-rate short serial mode regime;

(iii) a probe including:

(a) an illumination assembly having a plurality of light sources coupled to the MUX and activated by said activating pulses for generating amplitude-modulated light of more than two different optic channels having wavelength in a range where the scattering properties of blood are sensitive to light radiation, and

(b) a photodetector adapted for sensing a light response of the medium and generating a multiple channel signal reflecting blood characteristics;

(iv) an analyzer configured for analyzing said multiple channel signal, wherein the analyzer includes a digital signal processor having:

(a) an adaptive resonator bank unit configured for filtering said multiple channel signal and separating at least a part of multiple channels from each other; and

(b) an output filtering unit configured for obtaining time evolutions of the light responses of the medium for the part of said multiple channels.

Claims 17 and 18 have been canceled.

Claim 30 has been amended to read:

30. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for decomposition of a multiple channel signal reflecting characteristics of a blood perfused fleshy medium for use in determination of at least one desired blood parameter, where said multiple channel signal being generated in response to illuminating a portion of the medium by amplitude-modulated light of more than two different optic channels having wavelength in a range where the scattering properties of blood are sensitive to light radiation, the method steps comprising:

analyzing said multiple channel signal, where the analyzing includes:

(i) filtering said multiple channel signal and separating at least a part of multiple channels from each other; and

(ii) providing time evolutions of the light responses of the medium for the part of said multiple channels,

the method steps, wherein

said amplitude-modulated light is activated in a composite mode regime selected from the group [including] consisting of a short-serial-parallel mode regime and a mixed-rate short serial mode regime; and

the filtering of said multiple channel signal and the separating of said multiple channels from each other both include applying an adaptive resonator bank to said multiple channel signal.

Claim 31 has been amended to read:

31. A computer program product comprising a computer useable medium having computer readable program code embodied therein for decomposition of a multiple channel signal reflecting characteristics of a blood perfused fleshy medium for use in determination of at least one desired blood parameter, where said multiple channel signal being generated in response to illuminating a portion of the medium by amplitude-modulated light of more than two different optic channels having wavelength in a range where the scattering properties of blood are sensitive to light radiation, the computer program product comprising:

computer readable program code for causing the computer to analyze said multiple channel signal, where the analyzing includes:

filtering said multiple channel signal and separating at least a part of multiple channels from each other; and

providing time evolutions of the light responses of the medium for the part of said multiple channels, wherein

said amplitude-modulated light is activated in a composite mode regime selected from the group [including] consisting of a short serial-parallel mode regime and a mixed-rate short serial mode regime; and

the filtering of said multiple channel signal and the separating of said multiple channels from each other both include applying an adaptive resonator bank to said multiple channel signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etsub D. Berhanu whose telephone number is 571.272.6563. The examiner can normally be reached on Monday - Friday (Every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EDB

 ERIC F. WINAKUR
PRIMARY EXAMINER